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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,484	04/17/2001	Lisette Cooper	11910-003001	8521
26161	7590	08/04/2008	EXAMINER	
FISH & RICHARDSON PC			CHENCINSKI, SIEGFRIED E	
P.O. BOX 1022			ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55440-1022			3691	
			MAIL DATE	DELIVERY MODE
			08/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	09/836,484	COOPER ET AL.
	Examiner SIEGFRIED E. CHENCINSKI	Art Unit 3691

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

Status

- 1) Responsive to communication(s) filed on 22 April 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 14-18, 22, 23 and 28-32 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 14-18, 22, 23 and 28-32 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date ____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date ____.
 5) Notice of Informal Patent Application
 6) Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 14-18, 22, 23, 28-32 are rejected under 35 U.S.C. 103(a) as being disclosed by Gatto (US PreGrant Publication 2003/0065601 A1) in view of Applicant disclosed prior art (hereafter AAPA), Official Notice, Microsoft Excel ® 5 Training Book (hereafter Excel) and Jones et al. (US Patent 6,021,397).

Re. Claims 14-18, 22, 23, 28 & 29, Gatto, Jones, Makivic, Official Notice, AAPA, Morningstar.com, E*Trade collectively disclose a wide variety of computer automated graphic displays of a variety of data output from mathematical algorithms related to financial security market calculations regarding historical and projected data. Excel discloses one example of many general capabilities of off the shelf office software for graphically displaying data outputs of mathematical algorithms in many formats and geometric shapes with many notation capabilities. However, none of Gatto, Jones, Makivic, Official Notice, AAPA, Morningstar.com, E*Trade or Excel explicitly disclose the exact method for use in a visualization system comprising the steps of:

Re. Claim 14,

(a) generating data representing at least one stripe indicating a range of odds of a performance measure having indicated values at a succession of times, the range of odds being based on a probability density function of the performance measure, computed from a second derivative of an option price function, for each of the succession of times,

(b) a contour of a boundary of each stripe varying, for each of the succession of times varying according to variations in the odds of the performance measure being within the range of values indicated by the stripe as determined by the probability density function an, and

(c) displaying the stripes in the visualization system.

Re. Claim 28,

- (a) generating data representing at least one stripe that indicates a range of potential odds of a performance measure having indicated values at a succession of times later than a given date, the range of odds being based on a probability density function of the performance measure, computed from a second derivative of an option price function, for each of the succession of times,
- (b) each stripe beginning at a point which represents the date and becoming broader as it extends to times later than the given date,
- (c) each stripe including two portions, one of the portions representing the odds of the performance measure having indicated values prior to a second date based on one assumption, the other of the portions representing the odds of the performance measure having indicated values after the second date based on another assumption,
- (d) a contour of a boundary of each stripe varying, for each of the succession of times according to variations in the odds of the performance measure being within the range of values indicated by the stripe, as determined by the probability density function, and
- (e) displaying the stripes in the visualization system.

Re. Claim 15, the performance comprises a price of a financial asset.

Re. Claim 16, in which the performance measure comprises a return percentage.

Re. Claim 17, in which the performance measure comprises a tax-adjusted return percentage.

Re. Claim 18, in which generating data includes generating data representing two or more stripes, each representing a different range of potential values of the performance measure, and displaying includes displaying each of the two or more

stripes.

Re. Claim 22, in which each stripe includes two portions, one of the portions representing the potential values prior to a second date based on one assumption, the other of the portions representing the potential values after the second date based on another assumption.

Re. Claim 23, in which the second date is a date on which tax effects change from the one assumption to the other assumption.

Applicant states that claim 14 is exemplary of claim 28 (REMARKS submitted June 15, 2006, p. 8, ll. 32-33).

Re. Claim 29,

- (a) generating data representing a trend-following curve as a function of a price of a financial asset at a succession of historical times prior to a first date,
- (b) generating data representing two or more stripes, each stripe indicating a range of odds that the asset has values shown by the stripe at each time of the succession of future times after the first date, the range of odds being based on a probability density function of the price, computed from a second derivative of an option price function, for each of the succession of times,
- (c) each stripe beginning at the end of the trend-following curve at a point on the curve corresponding to the price at the first date and becoming broader as it extends to future times after the first date,
- (d) each stripe including two portions, one of the portions representing the odds of the performance measure having indicated values prior to a second date based on one assumption, the other of the portions representing the odds of the performance measure having indicated values after the second date based on another assumption,
- (e) a contour of a boundary of each stripe varying, for each of the succession of future times, according to variations in the odds of the price having the values indicated by the stripe as determined by the probability density function, and
- (f) displaying the trend line and the stripes in the visualization system.

Re. Claim 30, in which the probability density function is computed from a second derivative of a call price function.

Re. Claim 31, in which the probability density function is computed from a second derivative of a put price function.

Re. Claim 32, generating data representing a trend-following curve as a function of provided values of the performance measure at a succession of times prior to a given date, the trend-following curve ending at the beginning of the at least one stripe at a point on the curve corresponding to the performance measure at the given date, and displaying the trend-following curve in the visualization system.

The Office Actions dated March 12, 2007, July 3, 2006, March 9, 2006 and September 15, 2005 established on the record the disclosures of Gatto, Jones, Makivic, Official Notice, AAPA (such as that of Morningstar.com and E*Trade) that the above mentioned computer automated graphic displays of quantitative data displays of various algorithms were in widespread use in the financial securities industry.

Further, the use of graphic displays of data was old, well known and a ubiquitous phenomenon at the time of applicant's invention. The computer revolution automated the art of graphic displays and put it on the computer screen and on computer printouts, first in a single color contrast on a background color (e.g. white on a dark grayish or black background), and then in a multiplicity of colors on a background of the user's choice. Some of the dramatic examples of this computer automation revolution are CAD/CAM, maps, computer animation, and the computer displays of tables, charts and graphs in all kinds of shapes, virtually any known geometric shape and other hand drawn shapes as well. The most well known softwares which came into the market place in the 1980's for the graphic and geometric display of data were Lotus123, Lotus Notes, Harvard Graphics, Excel and Adobe, among many others, along with other off the shelf and custom software systems. Several of these software systems have automated the process of creating basic free form mathematically related graphics and general art on a computer screen available in relatively inexpensive off the shelf packages to be run on the ordinary desk top or laptop PC. Applicant is referred to select pages of an independent EXCEL ® 5 training book as an example of what one of the simpler off the shelf software packages was capable of prior to Applicant's invention directly related to Applicant's invention. The ordinary practitioner of the art would have

been familiar with these capabilities at the time of Applicant's invention and also would have known that off the shelf and custom softwares were capable of all of the graphic display features in Applicant's invention. The ordinary practitioner also would have known that widespread use was being made in the financial arts of these very handy computer automated graphic displays of quantitative information of every kind being used by office, accounting, financial and investment clerks, financial managers, financial traders, investors of every level of sophistication and PhD academics in the financial arts alike.

Applicant has previously amended the claims with synonym meanings of the language which the amendment language replaces and displays of additional variations of data. In Applicant's response received October 3, 2007 Applicant amended the independent claim limitations with limitations which display other data elements, some of which are based on more complex algorithms. The inventions and the limitations remain the same in their meaning. The invention remains one of displaying data in graphical forms which were well known in the prior art at the time of Applicant's invention. It matters not how simple or complex the algorithms are whose numeric results are being displayed in graphic form. Examples from claims 14, 18, 28 and 29 are:

- "trend-following curve" for a "trend-line";
- "a range of odds" for a "range of potential values" of the performance measure;
- "the range of values indicated by the stripe" for "the range represented by the stripe";
- "... function of the performance measure, computed from a second derivative of an option price ..." and "a contour of a boundary of each stripe ..." (amended claim 14);
- "... the range of odds being based on a probability density function of the price, computed from a second derivative of an option price function, for each of the succession of times" (amended claim 29).

It is understandable that Applicant had little choice in substituting synonym language in order to not add new matter.

However, an ordinary practitioner of the art at the time of Applicant's invention would have found it as obvious to have combined the disclosures of Gatto with the art of Jones, Makivic, Official Notice, AAPA (such as that of Morningstar.com and E*Trade) and Excel in order to produce a method for use in a visualization system comprising the steps of the above stated limitations of claims 14-18, 22, 23 & 28. The practitioner's motivation would have been based on the desire to provide users with improved tools for effectively viewing historical estimates, analytical projections and recommendations regarding financial assets such as securities (Gatto, [0008]).

Response to Arguments

2. Applicant's arguments received April 22, 2008 have been fully considered but they are not persuasive.

ARGUMENT: "the applicant respectfully disagrees that the examiner's argument amounts to a *prima facie* case of obviousness." (p. 5, ll. 16-17).

Claim 14 is exemplary (p. 5, l. 20).

Supporting argument (a) - The features in claim 14 beginning with "generating data" and "a contour of a boundary" "are important, clear, specific, novel, and non-obvious features of claim 14"(p. 5, ll. 20-31).

Supporting argument (b) - Regarding the examiner's phrase "*The ordinary practitioner* of the art would have been familiar with these capabilities at the time of Applicant's invention and also would have known that off the shelf and custom softwares were capable of all of the graphic display, features in Applicant's invention. "(p. 6, ll. 27-30) ... "the examiner has made an improper inference in the underlined italicized clause, and that inference cannot support an argument of obviousness. "(p. 6, ll. 40-41).

Supporting argument (c) – (1) "Contrary to the examiner's statement, an ordinary practitioner could not "have known that off the shelf and custom softwares were capable of all of the graphic display features in applicant's invention" because that practitioner would have had no way of knowing of the specific graphic display features of, say, claim

14, in the first place. The examiner assumes that the practitioner would have known of the existence of those features, but, as the examiner has noted, there is nothing in any of the references to support that assumption. "(p. 7, ll. 1-6).

(2) "No matter how strong the practitioner's motivation, there was nothing in the named references from which he could have reached the applicant's invention. There was no road map, no indication in any way that these features existed or would have been useful. A person who has, in the examiner's words, a "desire to provide users with improved tools for effectively viewing historical estimates, analytical projects and recommendations regarding financial assets such as securities," still has to come up with ways to satisfy those users. There are potentially infinitely many devices and ways to do that. The applicant has conceived features that are powerful, effective, and new. There is no indication that a practitioner, no matter how motivated, would have discovered those features from the named references.

Because the examiner has given no detail of how the practitioner would have come up with those ways, the applicant respectfully is unable to provide any more detailed a refutation than the one articulated above. "(p. 7, l. 25 – p. 8, l. 5).

RESPONSE:

A. THE MATTER OF LAW

1) KSR and *In re Kahn*

The Court noted that "[t]o facilitate review, this analysis should be made explicit. *Id.* (citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). However, "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1741, 82 USPQ2d at 1396.

2) >I. < RATIONALE MAY BE IN A REFERENCE, OR REASONED FROM COMMON KNOWLEDGE IN THE ART, SCIENTIFIC

PRINCIPLES, ART-RECOGNIZED EQUIVALENTS, OR LEGAL PRECEDENT

The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning). ”.

3) Burden of Proof

“[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on *prima facie* obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).” (MPEP § 2112.01).

4) MPEP 2145 Consideration of Applicant's Rebuttal Arguments [R-3]

I. ARGUMENT DOES NOT REPLACE EVIDENCE WHERE EVIDENCE IS NECESSARY

Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 <2100_2129.htm> and § 2144.03 <2100_2144_03.htm> for a discussion of admissions as prior art.

The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness.”). See MPEP § 716.01(c) <0700_716_01_c.htm> for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration.

5) PREDICTABLE RESULTS

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"...., in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007)., the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *id.* at 1739 and discussed circumstances in which a patent might be determined to be obvious without an explicit application of the teaching, suggestion, motivation test. In particular, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of *Hotchkiss*, 11 How. 248." *KSR*, 127 S.Ct. at 1739 (citing *Graham*, 383 U.S. at 12 (emphasis added)), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The Court explained: When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill."

6) MPEP 716, UNEXPECTED RESULTS

716.02 Allegations of Unexpected Results

Any differences between the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (differences in sedative and anticholinergic effects between prior art and claimed antidepressants were not unexpected). In *In re Waymouth*, 499 F.2d 1273, 1276, 182 USPQ 290, 293 (CCPA 1974), the court held that unexpected results for a claimed range as compared with the range disclosed in the prior art had been shown by a demonstration of "a marked improvement, over the results achieved under other ratios, as to be classified as a difference in kind, rather than one of degree." Compare *In re Wagner*, 371 F.2d 877, 884, 152 USPQ 552, 560 (CCPA 1967) (differences in properties cannot be disregarded on the ground they are differences in degree rather than in kind); *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Inter. 1992) ("we generally consider a discussion of results in terms of 'differences in degree' as compared to differences in kind' . . . to have very little meaning in a relevant legal sense").

716.02(a) [R-2] Evidence Must Show Unexpected Results

B. IN THE INSTANT CASE

- 1) As stated above in the case of law, it is the examiner's responsibility to determine the knowledge of one of ordinary skill in the art of an Applicant's invention and to adequately present rationale to support that determination. The examiner has

accomplished this according to the various aspects of guidance provided by law, such of which is excerpted above.

2) The examiner has provided substantial and adequate combination of supporting evidence and rationale, including a thorough exposition of what the ordinary practitioner would have known at the time of Applicant's invention, for the rejection under the 35 USC 103(a) obviousness statute. The rationale is repeated above for Applicant's convenience.

3) The cited prior art contains specific examples of various graphic displays of data, particularly financial data in the analogous art. It matters not what kinds of algorithms create the data. In any case, algorithms are not claimed.

4) Applicant has failed to satisfy the required burden of proof, since the results of Applicant's invention are entirely predictable based on what the ordinary practitioner would have known. Further, Applicant has failed to present a case of unexpected results.

5) Applicant's attempt to support the argument of an improper inference regarding the knowledge of the ordinary practitioner fails to provide credible support. The comparison to the semiconductor art has no basis and no bearing on what the ordinary practitioner would have known about the graphic presentation of data.

6) Regarding the lack of a road map in the prior art references, the examiner clearly and thoroughly and at length provided a combination of evidence and rationale regarding what the ordinary practitioner would have or should have known at the time of Applicant's invention, and presented rationale for linking that knowledge with the prior art presented.

7) In conclusion, the examiner believes that he has presented a proper *prima facie* case of obviousness in satisfaction of the requirements of the MPEP and case law, some of which is presented above.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Siegfried Chencinski whose telephone number is (571)272-6792. The Examiner can normally be reached Monday through Friday, 9am to 6pm. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Alexander Kalinowski, can be reached on (571) 272-6771.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington D.C. 20231
or (571)273-8300 [Official communications; including After Final communications
labeled "Box AF"]

or (571) 273-6792 [Informal/Draft communications, labeled "PROPOSED" or
"DRAFT"]

Hand delivered responses should be brought to the address found on the above
USPTO web site in Alexandria, VA.

SEC
July 21, 2008

/Narayanswamy Subramanian/
Primary Examiner, Art Unit 3691